

REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 91-016
(RESCINDING ORDER NO. 85-67)

REVISED SITE CLEANUP REQUIREMENTS FOR:

RHONE-POULENC, INCORPORATED, AND
SANDOZ CROP PROTECTION CORPORATION

FOR THE SITE LOCATED AT:

1990 BAY ROAD, EAST PALO ALTO
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. SITE DESCRIPTION Soil and groundwater pollution exist on a 5.19 acre site currently owned by Sandoz Crop Protection Corporation, and located at 1990 Bay Road, East Palo Alto (Figure 1). The site is located about 2000 feet west of San Francisco Bay and about 4500 feet northwest of San Francisquito Creek, a tributary of the bay. Soil and groundwater pollution also exists on approximately 8 acres of adjacent properties to the west, south and east that are owned by others. Tidal and non-tidal marshes border the site on the east and southeast. Shallow groundwater currently discharges into the wetlands south and east of the site. Non-tidal marshes are bounded by levees with a portion constructed before 1939 and another portion by 1955. The site has been used for industrial purposes for over 60 years.
2. ADJACENT PROPERTIES The site is divided into the onsite and offsite areas. The onsite area is the 5.19 acres currently owned by Sandoz Crop Protection Corporation (SCPC). The offsite area is the 8 acres adjacent to the plant which have been affected by the pollutants. Soil and groundwater pollution has been detected on the onsite and offsite areas. This approximate 13-acre area, including portions of adjacent properties, is generally referred to as the 1990 Bay Road Site. The 1990 Bay Road Site is shown on Figure 2 in outline and with property ownership designated.

3. SITE HISTORY Prior to 1926 the site was occupied by Reed Zinc Company, whose activities are unknown. From 1926 to 1964, the site was occupied by Chipman Chemical Company for the production and formulation of sodium arsenite-based herbicides and pesticides. In 1964, Rhodia Incorporated acquired Chipman and its facility, and continued operation until 1971 when operation ceased. Rhodia changed its name to Rhone-Poulenc Incorporated (RPI) in 1978. Chipman and Rhodia formulated sodium arsenite in an underground tank located along the railroad spur and disposed of some of the wastes from this process in a shallow sludge pond located on the northwest portion of the site (See Figure 2).

Zoecon Corporation (ZC) purchased the property in 1972 and has since occupied the site for the purpose of formulating and manufacturing insect control chemicals. ZC was purchased in 1983 by Sandoz U.S. Incorporated, who in 1986 merged with Velsicol and at that time renamed the company Sandoz Crop Protection Corporation (SCPC). SCPC, which is a RCRA facility, treats and stores hazardous wastes under Department of Health Services (DOHS) Permit CAT00061135.

4. POLLUTANTS DETECTED Soil and groundwater at the site are polluted with inorganic compounds which are probably the result of site use by RPI related companies. Metals detected at levels of concern include arsenic, lead, cadmium, selenium and mercury. Groundwater samples collected in 1988 and 1989 from 14 wells at the site did not contain detectable levels of pesticides. Some of the pollutants of concern on adjacent properties, particularly arsenic, are believed to derive from the Sandoz site, most likely through surface runoff.

Volatile organic compounds (VOCs) have not been detected in soils onsite, but have been detected in groundwater in a number of wells on the site, most notably along the southern portion near the railroad tracks and offsite along the eastern end of the Borman Steel Company property. DOHS has found no evidence to link the VOCs with the activities associated with the ownership or operation of the site by any of RPI's predecessors. RPI is not named as a discharger of VOCs; however, the effect of VOCs on proposed remedial actions shall be considered. Preliminary Board review has not found evidence at this time to indicate has used solvents of concern onsite. There is the need for a thorough review of site and chemical use histories for all past and present onsite and offsite property owners and occupants to determine their contribution of VOC discharges.

The issue of VOCs may be handled independently in a separate Order, particularly for offsite occurrence, and could include parties not already named within this Order. The

Board will consider non binding allocation of responsibility (NBAR) procedures at a future date if it appears that other parties may be involved with VOC pollution. In the meantime, onsite monitoring of VOCs shall be the responsibility of SCPC, the current property owner. Should monitoring of groundwater be required on adjacent properties it shall be the responsibility of each of each of the property owners. The board staff intends to identify dischargers of VOCs and to name them as responsible parties to any action which may be required.

5. REGULATORY STATUS Chipman Chemical Company and Rhodia Incorporated are known to have produced arsenic-based pesticides at the site which is the probable source of some of the pollutants found in soil and groundwater, both onsite and on adjacent properties. RPI is a discharger because it is the successor in interest of Chipman and Rhodia and is responsible for any discharges which may have been made by them. SCPC is a discharger because of their current ownership of the site and documented use of solvents. RPI and SCPC are hereinafter referred to as "Dischargers".

The site was proposed for inclusion on the National Priority List (NPL) in 1985 under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as later amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. DOHS became the lead agency in regulation under CERCLA/SARA pursuant to a Consent Order dated August 27, 1987, signed by the dischargers, DOHS and the Board. In October, 1989, the site was removed from consideration for the NPL by EPA. Under the EPA's RCRA policy, regulation of site cleanup continued under DOHS lead pursuant to the 1987 Consent Order, following CERCLA guidance.

The site has been under investigation since 1981 and no significant remediation has been accomplished. The dischargers proposed a remedial plan to the DOHS in 1984 which was not adopted due to the site's placement on the proposed NPL and to the ensuing imposition of additional requirements. Numerous delays in completing the RI/FS process have occurred since 1985 and are attributable to all parties including several state and federal agencies.

Lead agency role for regulating cleanup has been transferred to the Regional Board by a stipulation to the Consent Order currently being finalized, to be signed by RPI, DOHS and the Regional Board. The agencies agree that migration of pollution via surface runoff, and its potential impact to the wetlands, surface waters and shallow groundwater, will be more adequately handled by the Board. Remediation can also proceed in a more timely manner through use of Board

Orders. This Regional Board Order will regulate investigation, monitoring and remediation of soil and groundwater pollution at the 1990 Bay Road Site.

6. BOARD ENFORCEMENT HISTORY Cleanup and Abatement Order (CAO) 82-001, adopted on April 15, 1982, required the dischargers to investigate the vertical and lateral extent of soil, surface and groundwater pollution, and abate the same. Subsequent revisions of the Order were made to allow additional time for completion of tasks: Order 82-002 adopted on April 21, 1982; Order 82-005 adopted on October 13, 1982; and Order 83-012 adopted on December 20, 1983.

Waste Discharge Requirements Order 85-67, adopted on May 15, 1985, rescinded previous Orders and required the dischargers to conduct further site characterization, construct monitoring well systems in the shallow and deep aquifers, and submit results of groundwater sample analyses. Under the Consent Order, the Board is given the authority to adopt and revise Site Cleanup Orders or take any other necessary enforcement action. The current Board Order is being revised to reflect the change in lead agency, to include tasks necessary to complete the FS/RAP process, update groundwater monitoring and to ensure design of an adequate groundwater mitigation response for final site cleanup.

7. SITE CHARACTERIZATION Site characterization at the 1990 Bay Road Site has been ongoing since initial investigations in 1980 and 1981 found metals pollution in soil and groundwater onsite. Regional Board Orders adopted in 1982 and 1983 required the dischargers to determine the extent of soil and groundwater pollution onsite and offsite. Further investigations were conducted during 1983 and 1984 to determine the vertical and lateral extent of soil and groundwater pollution and to quantify rates and direction of groundwater flow and pollutant migration. In 1984 the dischargers submitted a proposal for site remediation evaluating several alternatives including capping and monitoring groundwater, and source stabilization or removal. In 1985 and 1986, pursuant to Board Order 85-67, a groundwater monitoring well network for the shallow and deep aquifers was installed. All work prior to 1986 culminated in the submission of an evaluation of remedial alternatives and a proposed Remedial Action Plan.

In accordance with CERCLA requirements, a Remedial Investigation (RI) report was submitted as final dated September 19, 1989 and was accepted by all agencies. A draft Feasibility Study and Remedial Action Plan (FS/RAP) report was submitted August 28, 1989 and is currently under review. Preparation of the RI and FS between 1986 and present has required the following:

- a. a biota study in the tidal and non-tidal marshes that included sampling of soil, sediments, wetland plants, and benthic food chain organisms;
- b. additional soil studies in the Bains, Bay Road, Torres, Levee, and tidal marsh areas to define further the horizontal extent of pollution;
- c. additional soil studies in the Sandoz plant, railroad track, sludge pond, Torres and non-tidal marsh areas to define the vertical extent of pollution;
- d. additional groundwater studies to define areas where arsenic concentrations are elevated above background levels, to address RWQCB concerns about the adequacy of the long term monitoring system at the site, and to determine the presence of trace elements and U.S. EPA Target Compound List compounds in the groundwater at the site;
- e. additional sampling of surface water in the tidal and non-tidal marshes to determine the presence of arsenic and related metals;
- f. additional air monitoring during field activities described above that disturb polluted surface soil;
- g. pilot studies of soil fixation technologies;
- h. additional soil and groundwater sampling for organic compounds on the PG and E and Torres properties;
- i. sampling of all wells in the monitoring well network for VOCs; and
- j. sampling of all wells at the site for total dissolved solids concentrations.

The work listed above, as well as the tasks included in this Order, are necessary to meet the requirements of the RI/FS/RAP process and to provide sufficient information on which to base final cleanup decisions. Certain documents should be completed and, where appropriate, updated in light of subsequent changes in applicable guidance documents and advances made in remedial technology.

This Order deems approved all reports and actions accepted as final pursuant to the Consent Order, and provides for the preparation of final FS and RAP reports.

In response to a proposal by RPI, and with which Board staff concurs, the FS/RAP process shall handle the site as two

operable units. These operable units shall be roughly defined as the uplands unit and the wetlands unit, and a separate FS/RAP shall be completed for each unit. By handling these two units separately, Regional Board staff intends that remediation of the upland area shall proceed at an earlier date. The discharger would like to complete excavation of polluted soils in the upland area to take place before the land ban for arsenic occurs. The finalization of the FS/RAP for the wetland operable unit will require input from the results of the ecological assessment, to be submitted in January, 1992.

8. SOIL AND GROUNDWATER POLLUTION The vertical and lateral extent of arsenic pollution in soil and groundwater has been extensively investigated and documented, using over 1500 soil samples and 84 monitoring wells. However, the extent of other pollutants, such as VOCs found in groundwater samples from the onsite and offsite wells, have not been as well defined. The extent of other priority metals, including lead, mercury, cadmium, selenium and copper, has not been well defined for the wetland and non-tidal areas to the east and south, but is currently being addressed in the ecological assessment.

The distribution and migration of arsenic, as an indicator, is monitored by a network of wells in the shallow groundwater zones, and by a single well in the deep aquifer. The extent of VOCs detected in soil and groundwater in portions of the site and their effect on cleanup has not been specifically addressed.

The existing groundwater monitoring network consists of 20 perimeter monitoring wells and a deep groundwater zone well, and was approved by the Board as part of Order 85-67. The perimeter monitoring network includes the following wells: W-102; W-103; W-104; W-105; W-106; W-107; W-108; W-109; W-110; W-111; W-112; W-113; W-114; W-118; W-119; W-120; W-121; W-122; W-123; and W-124. The monitoring well network for the deep aquifer consists of one well, W-101. Board staff is concerned that the presence of a single well is inadequate for determination of flow direction as well as detection and long term monitoring of migration of pollutants should they reach the deep aquifer, which is used as a reserve municipal drinking water supply.

The feasibility of extracting groundwater from the shallow aquifers has been demonstrated by slug tests. In order to design a fully effective groundwater mitigation contingency plan Board staff believe further pump tests could be necessary, although the dischargers consider the slug test data to be adequate. Pollutants other than arsenic must also be taken into account in designing the groundwater

treatment element of the contingency plan, regardless of their origin.

9. INTERIM REMEDIAL ACTIONS Interim remedial actions at the site have included monitoring of groundwater in the shallow and deep aquifers with a monitoring well network installed under Board Order 85-67. An Order to post and fence certain areas of the site was issued in March 1987 by DOHS and a fence corresponding to the approximate 50 ppm arsenic concentration was installed. In 1981, under direction of DOHS, drummed waste and associated polluted soil unrelated to RPI was removed from the northern portion of the Torres Property (see Figure 2). No other interim remedial actions have been taken with respect to soil and ground[]water pollution.
10. SCOPE OF THIS ORDER This Order contains tasks for a revised groundwater monitoring program, aquifer characterization and proposed contingency plan should further migration of pollutants be detected, and preparation of documents following CERCLA requirements. The Order also requires a separate FS/RAP for the uplands and wetlands portions of the site. The uplands area is that portion of the site not covered in the ecological assessment, and which does not depend upon results of the Ecological Assessment for completion of the FS/RAP. Early action soil removal is a task to be completed before the submission of the FS, but is intended to be a component of the final remediation plan for the upland area. The early action soil removal is required to be completed before land disposal restrictions become effective for arsenic.

The Order also requires SCPC to conduct a Primary Responsible Party search for all properties currently or previously owned by them in the affected area in order to determine possible contribution to VOC discharges. RPI shall not be required to conduct such a search for the inorganic pollutants related to their discharge at this time. These tasks are necessary to evaluate and monitor site conditions that continue to pose a threat to human health and the environment through surface runoff and further subsurface migration of pollutants, to complete the RI/FS/RAP process, and to form the basis for final cleanup decisions.

11. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwater.

12. The existing and potential beneficial uses of the groundwater underlying and in the vicinity of the facility include:

- a. Industrial process water supply
- b. Industrial service water supply
- c. Municipal and Domestic water supply
- d. Agricultural water supply

The lower shallow aquifer, between 20 and 40 feet in depth, has no potential beneficial use as a municipal and domestic supply based on the Total Dissolved Solids (TDS) criteria of State Board Resolution 88-63, "Sources of Drinking Water".

13. The existing and potential beneficial uses of the surface waters (San Francisco Bay and San Francisquito Creek) and marshes include:

- a. Contact and non-contact water recreation
- b. Warm and cold fresh water habitat
- c. Fish migration and spawning
- d. Commercial and sport fishing
- f. Preservation of rare and endangered species
- g. Estuarine habitat
- h. Wildlife habitat
- i. Salt marsh habitat
- j. Navigation
- k. Shellfish harvesting
- l. Industrial service supply

14. The dischargers have caused or permitted, and threaten to cause or permit, waste to be discharged or deposited where it is or probably will be discharged to waters of the State and create or threaten to create a condition of pollution or nuisance as defined in Section 13050(m) of the California Water Code.
15. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.
16. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.
17. The Board, in a public meeting, heard and considered all comments pertaining to the discharge. The EPA and DOHS have been consulted regarding the prohibitions, specifications,

and provisions of this Order, agree with them, and further have agreed to provide comments on the Discharger's reports and actions to the Board and to the Dischargers in a timely manner. The DOHS has further agreed not to take any action without prior consultation with the Board, unless immediate action is necessary to protect human health or the environment; if an emergency precludes consultation prior to implementation of any action, consultation shall take place as soon as circumstances allow. The Board has consulted the National Oceanic and Atmospheric Administration, the U.S. Fish & Wildlife Service, the U.S. Army Corps of Engineers, the Bay Area Air Quality Management District, the California Fish & Game Department, and the San Francisco Bay Conservation and Development Commission prior to issuing this order. The Board shall seek timely comments on the Discharger's reports and actions from these and all other interested federal and state agencies, and shall consider those comments.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State, is prohibited.
2. Significant migration of pollutants through surface or subsurface transport to waters of the State, is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants, are prohibited.
4. The storage, handling treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

B. CLEANUP SPECIFICATIONS

1. The dischargers shall continue to conduct site investigation and monitoring activities as needed to define the current local hydrogeologic conditions and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of

pollutant migration, additional characterization of pollutant extent may be required.

2. The cleanup levels for source-area soils shall be health-based and protective of human health and the environment. If levels higher than those set by health-based parameters for pollutants are proposed, the discharger must demonstrate that cleanup to lower levels is infeasible, that the alternate levels will not threaten the quality of waters of the State, and that human health and the environment are protected. If levels higher than those set by health-based parameters are proposed, institutional controls shall be considered. If any pollutants are left in the soil, a program of continued groundwater monitoring may be required.
3. Final cleanup levels for polluted groundwater, onsite and offsite, shall be in accordance with State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California". Proposed final cleanup levels shall be based on a feasibility study of remedial alternatives that compare implementability, cost, effectiveness, time to achieve cleanup goals and an assessment of risk to determine affect on beneficial uses, human health and the environment. Cleanup levels shall also have the goal of reducing the mobility, toxicity, and volume of pollutants.
4. If groundwater extraction and treatment is considered as an alternative, the feasibility of water reuse, reinjection, and disposal to the sanitary sewer must be evaluated. Based on the Regional Board Resolution 88-160, the dischargers shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The dischargers shall not be found in violation of the Order if documented factors beyond the discharger's control prevent the dischargers from attaining this goal, provided the dischargers have made a good faith effort to attain this goal by feasible and practicable means. If reuse or reinjection is part of a proposed alternative, an application for Waste Discharge Requirements may be required. If discharge to waters of the State is part of a proposed alternative, an application for an NPDES permit must be completed and submitted in a timely manner, and must include the evaluation of the feasibility of water reuse, reinjection, and disposal to the sanitary sewer.

5. The dischargers shall maintain a system of perimeter monitoring well pairs completed in the upper and lower shallow aquifer which shall be located within 100 feet of the .05 ppm contour for arsenic. Concentrations of arsenic in the perimeter wells must be maintained below the MCL. Concentration for arsenic in the deep aquifer shall be maintained at background.

C. PROVISIONS

1. The dischargers shall comply with the Prohibitions and Specifications above, in accordance with the following time schedule and tasks.

- a. **TASK: REVISED SAMPLING AND ANALYSIS PLAN**
DUE DATE: March 31, 1991

Description: RPI shall submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the existing monitoring well network in detecting migration of the groundwater pollution plume in all aquifers.

The report shall also contain a proposal for a revised groundwater monitoring program capable of monitoring migration of pollutants in all aquifers on and offsite. The program proposal shall contain at least the following elements:

- 1) provision for groundwater sampling and analysis on an annual basis, then, when any remedial actions are to be taken, on a quarterly basis. The first round of quarterly sampling shall have been completed immediately prior to implementation of remedial measures so that any impact of that measure can be evaluated.
- 2) provision for analysis of all wells of the monitoring well network in the first sampling under this Order which have not been previously tested for priority metals, pesticides, total dissolved solids, and turbidity using EPA approved methods,
- 3) provision for groundwater samples in the second, and subsequent samplings, will be analyzed for all pollutants detected and any metals detected at elevated concentration (as determined by the Executive Officer) in the first sampling under this order, using appropriate EPA test methods,

- 4) provision for groundwater level measurements to be taken in all monitoring wells during all sampling rounds, and
 - 5) provision for determining tidal influence in monitoring wells.
- b. TASK: SANDOZ CROP PROTECTION CORPORATION,
SAMPLING AND ANALYSIS PLAN
DUE DATE: March 31, 1991
- Description: SCPC shall submit a technical report acceptable to the Executive Officer proposing a sampling and analysis plan capable of monitoring VOCs in onsite groundwater monitoring wells. Sampling should be coordinated so as to coincide with RPI sampling.
- c. TASK: SANDOZ CROP PROTECTION CORPORATION, SITE
AND CHEMICAL USE HISTORY
DUE DATE: March 31, 1991
- Description: SCPC shall submit a technical report acceptable to the Executive Officer containing the site and chemical use history during their ownership and occupation of the facility. The report shall contain the following: 1) all chemicals used, stored or otherwise handled on the site, 2) chemical use and handling practices, 3) disposal treatment and transfer of primarily solvents and 4) accident history including facility damage and spills.
- d. TASK: AQUIFER CHARACTERIZATION AND CONTINGENCY
PLAN
DUE DATE: April 31, 1991
- Description: RPI shall submit a technical report acceptable to the Executive Officer proposing a contingency plan for mitigation of groundwater if significant migration of pollutants is detected in the monitoring well network. Concentrations of arsenic as an indicator chemical shall be maintained below MCLs in the perimeter wells. Significant migration of pollutants will be defined as an increase in concentration detected in any perimeter monitoring well, above a concentration as specified below, that will trigger a mitigation response. The proposal shall contain provisions for the following:

- 1) listing of all wells designated as perimeter wells which includes pollutant concentrations detected in each of the designated wells,
- 2) specification of a triggering mechanism for a mitigation response so that concentrations for pollutants remain below MCLs in all perimeter wells,
- 3) a revised sampling schedule to be implemented in the event the triggering concentration is reached during sampling, which shall be able to verify this concentration in a timely manner,
- 4) provisions for identification of technology presently considered to offer the best approach to groundwater remediation, and provisions for future technology review if implementation is required, and
- 5) verification sampling and implementation of remedial measures following RCRA guidelines.

e. TASK: PROPOSE EARLY ACTION SOIL REMOVAL IN THE UPLAND AREA
DUE DATE: April 30, 1991

Description: RPI shall submit a technical report acceptable to the Executive Officer proposing soil removal for the upland area as an early action, time critical component of the upland FS/RAP. The report shall present sufficient RI/FS data and qualitative risk assessment information to support an early action proposal. The removal concentration shall be based on the upper threshold of effectiveness for soil treatment technology acceptable to the Executive Officer. The proposal shall also include a schedule for implementation.

For those areas considered by the U.S. Army Corp of Engineers as wetlands an additional proposal for restoration/offset/mitigation shall be included.

f. TASK: REVISE WORKPLAN FOR ADMINISTRATIVE TASKS
DUE DATE: March 29, 1991

Description: RPI shall submit technical reports acceptable to the Executive Officer to update, revise or finalize administrative tasks for

shall address the following tasks and propose submittal dates that will occur prior to June 30, 1991.

1. TASK: BASELINE PUBLIC HEALTH EVALUATION

Description: Submit a technical report acceptable to the Executive Officer containing the results of a Baseline Public Health Evaluation prepared in accordance with Risk Assessment Guidance for Superfund Human Health Evaluation Manual (EPA) 540/1-89/002, December, 1989.

2. TASK: DATA VALIDATION

Description: Submit a technical report acceptable to the Executive Officer that describes the procedures to be utilized for sampling and analyses and includes a complete data validation package for groundwater monitoring data that will be specified by the Executive Officer and evaluated under the Regional Board's Data Validation Contract. All samples shall be analyzed by laboratories certified to perform analysis on Hazardous Materials or laboratories using approved EPA methods or an equivalent method acceptable to the Executive Officer. The dischargers shall request the laboratories to follow California Department of Health Services guidance "Documentation Requirements for Project Data Packages" dated December 29, 1989 for preparation of data validation packages or when required by the Executive Officer. The dischargers shall request the laboratories maintain quality assurance/quality control records for the Regional Board review for a period of six years and will inform the Regional Board of each laboratory's response.

3. TASK: COMPILE AND INDEX AN ADMINISTRATIVE RECORD

Description: Submit a technical report acceptable to the Executive Officer which includes a proposal to compile and index an administrative record as outlined in EPA guidance on administrative records for selection of CERCLA response actions.

4. TASK: EVALUATION OF DEEP AQUIFER MONITORING

Description: Submit a technical report acceptable to the Executive Officer evaluating requirements for deep aquifer long term monitoring. The report shall include proposed locations of additional wells and a schedule for installation following completion of remedial action. Impact of pollution on the deep aquifer must be considered in the final FS for the uplands area.

5. TASK: UPDATE QUALITY ASSURANCE PROJECT PLAN

Description: Submit a technical report acceptable to the Executive Officer which updates the Quality Assurance Project Plan.

6. TASK: UPDATE HEALTH AND SAFETY PLAN

Description: Submit a technical report acceptable to the Executive Officer which updates the Health and Safety Plan.

g. TASK: SANDOZ CROP PROTECTION CORPORATION, PRIMARY RESPONSIBLE PARTY SEARCH
DUE DATE: May 31, 1991

Description: SCPC shall submit a technical report acceptable to the Executive Officer containing a Primary Responsible Party Search for all properties in the affected area which are currently or previously owned by SCPC.

h. TASK: SUBMITTAL OF FINAL FS

Description: RPI shall submit technical reports acceptable to the Executive Officer containing the results of the feasibility studies following EPA guidance and evaluating final remedial measures. The upland area (i.e., non-wetlands) FS shall cover areas outside of the area examined in the ecological assessment and the wetland area FS shall generally include the area examined in the current ecological assessment (i.e., wetlands not to be offset, namely tidal and non-tidal).

1. TASK: UPLAND OPERABLE UNIT FS
DUE DATE: July 31, 1991

2. TASK: WETLAND OPERABLE UNIT FS
DUE DATE: [May 29], 1992

i. TASK: SUBMITTAL OF RAP

Description: RPI shall submit technical reports acceptable to the Executive Office containing recommended remedial measures for the upland and wetlands operable units. The reports shall follow EPA guidance for Remedial Action Plans to achieve final cleanup and include a time schedule for implementation.

1. TASK: UPLAND OPERABLE UNIT RAP
DUE DATE: July 31, 1991

2. TASK: WETLAND OPERABLE UNIT RAP
DUE DATE: [May 29], 1992

j. TASK: ECOLOGICAL ASSESSMENT
DUE DATE: March 31, 1992

Description: RPI shall submit a technical report acceptable to the Executive Officer containing results of the wetlands ecological assessment study.

k. TASK: FIVE-YEAR STATUS REPORT
DUE DATE: February 20, 1996

Description: RPI shall submit a technical report acceptable to the Executive Officer containing: 1) results of any investigative work completed; 2) an evaluation of the effectiveness of the installed final cleanup measures to include total pounds of pollutants removed from groundwater; 3) additional recommended measures to achieve final cleanup objectives and goals; 4) a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve final cleanup objectives and goals; 5) tasks and time schedule necessary to implement any additional final cleanup measures and, 6) recommended measures for reducing Board oversight.

2. The dischargers shall submit to the Regional Board acceptable reports on compliance with the requirements of this Order that contain descriptions and results of work and analyses performed. It is not Board intent to duplicate any reports due, therefore any reports due concurrently may be combined. These reports prescribed below:

a. The discharger shall submit monthly status reports on compliance with this Order. The first report shall be for the month of March 1991 and shall be due on April

- a. RPI shall submit monthly status reports on compliance with this Order. The first report shall be for the month of March 1991 and shall be due on April 15, 1991. Thereafter reports shall be due on the 15th day of each month to cover the previous month. The report shall include at least the following:
 - 1) Summary of work completed since submittal of the previous report, and work projected to be completed before submittal of next report.
 - 2) Identification of any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles.
 - 3) Written notification which clarifies the reasons for noncompliance with any requirement of this Order, and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of noncompliance on achieving compliance with the remaining requirements of this Order.
- b. The dischargers shall regularly submit reports to the Board on results of groundwater monitoring. The first report shall be for the year from June 1990 to June 1991, and due on July 31, 1991. The reports shall be yearly thereafter, until quarterly monitoring begins. At that time, compliance and monitoring reports will be due on the last day of the month following each calendar quarter. All compliance and monitoring reports shall include at least the following:
 - 1) Tabulated results of annual and then quarterly water quality sampling analyses for all wells as specified under Provision 1.a., and updated groundwater pollution plume maps based on these results.
 - 2) A cumulative tabulation of all well construction details, water level measurements and updated piezometric maps based on these results.
 - 3) Reference diagrams and maps including geologic cross sections describing the hydrogeologic setting of the site, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent facilities and structures.

with all requirements of this Order and propose modifications which could increase the effectiveness of final cleanup actions. The first report shall be due on January 31, 1992, and would cover the previous calendar year. The report shall include at least: progress on site investigation and remediation, operation and effectiveness of remediation actions and systems, and an evaluation of the feasibility of meeting groundwater and soil cleanup goals.

3. RPI may, by written request, seek a modification or revision of the Prohibitions, Specifications, or Provisions of this Order or any program or plan submitted pursuant to this Order at any time. This Order and any applicable program, plan, or schedule may be modified, terminated or revised by the Board.
4. If the dischargers may be delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the dischargers shall promptly notify the Executive Officer. If, for any reason, RPI is unable to perform any activity or submit any document within the time required under this Order, RPI may make a written request for a specified extension of time. The extension request shall include a justification for the delay, and shall be submitted in advance of the date on which the activity is to be performed or the document is due. The Board staff may propose an amendment to the Order and bring the matter to the Board for consideration.
5. Nothing in this Order is intended or shall be construed to limit or preclude any right RPI has or may have to seek administrative and/or judicial review of any orders or determinations of the Board and/or its staff.
6. The submittal of technical reports evaluating remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each alternative measure. The remedial investigation and feasibility study shall conform to the guidance provided by Subpart E of the National Oil and hazardous Substances Pollution Contingency Plan (40CFR Part 300); Section 25356.1 (c) of the California Health and Safety Code; current applicable CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".
7. All hydrogeological plans, specifications, reports and

documents shall be signed by or stamped with the seal of a registered geologist, registered civil engineer, or certified engineering geologist.

8. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories or the consultant shall maintain quality assurance/quality control records for Board review for a period of six years.
9. The dischargers shall maintain in good working order, and operate in the normal standard of care, any facility or control system installed to achieve compliance with the requirements of this Order.
10. copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order shall be provided to the following agencies:
 - a. Hetch Hetchy Water District
 - b. San Mateo County Health Department
 - c. City of East Palo Alto
 - d. State Department of Health Services/TSCP
 - e. U. S. EPA, Region IX (H-6-3)
11. The dischargers shall permit, within the scope of each of their authorities, the Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:
 - a. Entry upon dischargers' premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
12. SCPC shall file a report in a timely manner on any changes in site occupancy and ownership associated with the facility described in this Order.

13. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, SCPC or RPI shall report such a discharge to this Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.
14. Any provisions of this Order substantially identical to provisions which the State Water Board or a court of law determines to be in excess of the Board's legal authority shall have no force or effect in this Order.
15. Adoption of this Order supersedes Waste Discharge Requirements Order 85-67 and it is hereby rescinded.
16. Adoption of this Order is intended to take the place of the rescinded Consent Order.
17. This Order is intended to be the primary regulating document by which site cleanup shall proceed with the Board as lead agency.
18. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 20, 1991.



Steven R. Ritchie
Executive Officer